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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/778,702 02/07/01 BHATT

A END919960141

MM91/0829
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EXAMINER

ALCALA, J

ART UNIT

PAPER NUMBER

2841

DATE MAILED:

08/29/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/778,702

Applicant(s)

BHATT ET AL.

Examiner

Jose H Alcala

Art Unit

2841

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 9-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 February 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to because reference characters "16" and "10" are both pointing to the same element, but designated with different names. Correction is required.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the circuitry disposed on the layer of dielectric material as read in Claims 18-20, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Specification

3. The disclosure is objected to because of the following informalities: It is more oriented to the method of making the printed circuit board than to the instant claimed invention. Appropriate correction is required.
4. The abstract is objected to because of the following informalities: It is more oriented to the method of making the printed circuit board than to the instant claimed invention. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 11, 14, 17 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Boggs US Patent No. 4,935,584.

Regarding claim 11, Boggs teaches a printed wiring board comprising a dielectric substrate (Reference Number 10), at least one filled (Reference number 50) plated through hole (Reference Number 18), and circuitry (Reference Number 16b) on said dielectric substrate connecting to said plated through hole, said circuitry having an aspect ratio greater than about 1 (See Figure 1).

Regarding claim 14, Boggs teaches that said circuitry includes a pad (Reference number 14 a) on each of said filled plated through holes.

Regarding claim 17, Boggs teaches a layer of dielectric material (Reference Number 20) disposed on said dielectric substrate and overlying said circuitry on said dielectric substrate, said layer of dielectric material having at least one via (Reference Number 26a) formed therein.

Regarding claim 20, Boggs teaches circuitry disposed on said layer of dielectric material (Reference number 24a).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 9,10,12,13,15,16,18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boggs US Patent No. 4,935,584.

Regarding claims 9 and 10, Boggs teaches a printed wiring board comprising a dielectric substrate (Reference Number 10), at least one filled (Reference number 50) plated through hole (Reference Number 18), and circuitry (Reference Number 16b) on said dielectric substrate connecting to said plated through hole. Boggs discloses the claimed invention except for said circuitry having a line width approximately equal to or less than the diameter of said filled plated through hole, or said circuitry having an aspect ratio greater than about 0.5. It would have been obvious to one of ordinary skill in the art at the time the invention was made to said circuitry having a line width approximately equal to or less than the diameter of said filled plated through hole or said circuitry having an aspect ratio greater than about 0.5, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claims 12 and 13, Boggs teaches that said circuitry includes a pad (Reference number 14 a) on each of said filled plated through holes.

Regarding claims 15 and 16, Boggs teaches a layer of dielectric material (Reference Number 20) disposed on said dielectric substrate and overlying said circuitry on said dielectric substrate, said layer of dielectric material having at least one via (Reference Number 26a) formed therein.

Regarding claims 18 and 19, Boggs teaches circuitry disposed on said layer of dielectric material (Reference number 24a).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references have some of the elements of the instant claimed invention: Lauffer et al. US Patent No. 6204456 B1, Kumagai et al. US Patent No. 4942079, Lan et al. US Patent No. 5962815, and Chong et al. US Patent No. 5699613.
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jose H Alcala whose telephone number is (703) 305-9844. The examiner can normally be reached from Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on (703) 308-3301. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JHA
August 26, 2001

